

L Number	Hits	Search Text	DB	Time stamp
1	2650	429/\$.ccls. and (electrode or double adj layer adj capacitor) and (active or (mesophase near4 (activated adj carbon adj fib\$3))) and (conduct\$4 or graphite) and (current adj collector)	USPAT; US-PGPUB	2002/06/27 10:58
10	65	(429/\$.ccls. and (electrode or double adj layer adj capacitor) and (active or (mesophase near4 (activated adj carbon adj fib\$3))) and (conduct\$4 or graphite) and (current adj collector)) and (concentration same collector same (surface or internal or inner or gradient))	USPAT; US-PGPUB	2002/06/27 10:17
13	13	(429/\$.ccls. and (electrode or double adj layer adj capacitor) and (active or (mesophase near4 (activated adj carbon adj fib\$3))) and (conduct\$4 or graphite) and (current adj collector)) and (concentration with collector with (surface or internal or inner or gradient))	USPAT; US-PGPUB	2002/06/27 10:42
22	0	429/\$.ccls. and (electrode or double adj layer adj capacitor) and (mesophase near4 (activated adj carbon adj fib\$3)) and (conductive or graphite) and (current adj collector) and (concentration with collector with (surface or internal or inner or gradient))	USPAT; US-PGPUB	2002/06/27 10:29
19	4	429/\$.ccls. and (electrode or double adj layer adj capacitor) and (mesophase near4 (activated adj carbon adj fib\$3)) and (conductive or graphite) and (current adj collector)	USPAT; US-PGPUB	2002/06/27 10:22
39	0	(electrode or double adj layer adj capacitor) and (active or (mesophase near4 (activated adj carbon adj fib\$3))) and (conductive or graphite) and (current adj collector) and (concentration with collector with (surface or internal or inner or gradient))	EPO; JPO; DERWENT	2002/06/27 10:29
43	0	(electrode or double adj layer adj capacitor) and (mesophase near4 (activated adj carbon adj fib\$3)) and (conductive or graphite) and (current adj collector) and (concentration with collector with (surface or internal or inner or gradient))	USPAT; US-PGPUB	2002/06/27 10:30
35	495	(electrode or double adj layer adj capacitor) and (active or (mesophase near4 (activated adj carbon adj fib\$3))) and (conductive or graphite) and (current adj collector)	EPO; JPO; DERWENT	2002/06/27 10:35
16	13	429/\$.ccls. and (electrode or double adj layer adj capacitor) and (active or (mesophase near4 (activated adj carbon adj fib\$3))) and (conduct\$4 or graphite) and (current adj collector) and (concentration with collector with (surface or internal or inner or gradient))	USPAT; US-PGPUB	2002/06/27 10:40
46	13	(429/\$.ccls. and (electrode or double adj layer adj capacitor) and (active or (mesophase near4 (activated adj carbon adj fib\$3))) and (conduct\$4 or graphite) and (current adj collector)) and (concentration with collector with (surface or internal or inner or gradient))	USPAT; US-PGPUB	2002/06/27 10:43
49	2653	429/\$.ccls. and (active or (mesophase near4 (activated adj carbon adj fib\$3))) and (conductive or graphite) and (current adj collector)	USPAT; US-PGPUB	2002/06/27 11:00
52	13	(429/\$.ccls. and (active or (mesophase near4 (activated adj carbon adj fib\$3))) and (conductive or graphite) and (current adj collector)) and (concentration with collector with (surface or internal or inner or gradient))	USPAT; US-PGPUB	2002/06/27 11:02
55	13	((429/\$.ccls. and (active or (mesophase near4 (activated adj carbon adj fib\$3))) and (conductive or graphite) and (current adj collector)) and (concentration with collector with (surface or internal or inner or gradient)) ) or (429/\$.ccls. and (electrode or double adj layer adj capacitor) and (active or (mesophase near4 (activated adj carbon adj fib\$3))) and (conduct\$4 or graphite) and (current adj collector) and (concentration with collector with (surface or internal or inner or gradient)) )	USPAT; US-PGPUB	2002/06/27 11:02
-	24	252/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)	USPAT; US-PGPUB	2002/04/24 07:56
-	60	204/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)	USPAT; US-PGPUB	2002/04/24 07:57

Search History 6/27/02 11:04:15 AM Page 1

-	76	361/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)	USPAT; US-PGPUB	2002/04/24 07:57
-	95	429/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)	USPAT; US-PGPUB	2002/04/24 07:57
-	0	(204/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and meso	USPAT; US-PGPUB	2002/04/24 07:54
-	9	(252/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (bonded or binder near4 collector)	USPAT; US-PGPUB	2002/04/23 15:35
-	24	(204/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (bonded or binder near4 collector)	USPAT; US-PGPUB	2002/04/23 15:39
-	43	(429/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (bonded or binder near4 collector)	USPAT; US-PGPUB	2002/04/23 15:40
-	41	(361/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (bonded or binder near4 collector)	USPAT; US-PGPUB	2002/04/23 16:42
-	1	(252/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and meso	USPAT; US-PGPUB	2002/04/24 07:53
-	5	(361/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and meso	USPAT; US-PGPUB	2002/04/24 07:52
-	3	(429/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and meso	USPAT; US-PGPUB	2002/04/24 07:53
-	7	(252/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (carbohydrate or cellulose or carbomethoxy adj cellulose or cmc)	USPAT; US-PGPUB	2002/04/24 07:41
-	11	(204/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (carbohydrate or cellulose or carbomethoxy adj cellulose or cmc)	USPAT; US-PGPUB	2002/04/24 07:39
-	24	(429/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (carbohydrate or cellulose or carbomethoxy adj cellulose or cmc)	USPAT; US-PGPUB	2002/04/24 07:41
-	24	(361/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (carbohydrate or cellulose or carbomethoxy adj cellulose or cmc)	USPAT; US-PGPUB	2002/04/24 07:39
-	7	(252/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (carbohydrate or cellulose or carbomethoxy adj cellulose or cmc)	USPAT; US-PGPUB	2002/04/24 07:42
-	24	(361/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (carbohydrate or cellulose or carbomethoxy adj cellulose or cmc)	USPAT; US-PGPUB	2002/04/24 07:43
-	24	(429/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (carbohydrate or cellulose or carbomethoxy adj cellulose or cmc)	USPAT; US-PGPUB	2002/04/24 07:43
-	11	(204/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (carbohydrate or cellulose or carbomethoxy adj cellulose or cmc)	USPAT; US-PGPUB	2002/04/24 07:43
-	55	((252/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (carbohydrate or cellulose or carbomethoxy adj cellulose or cmc) ) or ((361/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (carbohydrate or cellulose or carbomethoxy adj cellulose or cmc) ) or ((429/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (carbohydrate or cellulose or carbomethoxy adj cellulose or cmc) ) or ((204/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (carbohydrate or cellulose or carbomethoxy adj cellulose or cmc) )	USPAT; US-PGPUB	2002/04/24 07:47

-	4	((252/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (carbohydrate or cellulose or carbomethoxy adj cellulose or cmc) ) or ((361/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (carbohydrate or cellulose or carbomethoxy adj cellulose or cmc) ) or ((429/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (carbohydrate or cellulose or carbomethoxy adj cellulose or cmc) ) or ((204/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and (carbohydrate or cellulose or carbomethoxy adj cellulose or cmc) ) ) and meso	USPAT; US-PGPUB	2002/04/24 07:47
-	5	(361/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and meso	USPAT; US-PGPUB	2002/04/24 07:54
-	0	(204/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and meso	USPAT; US-PGPUB	2002/04/24 07:54
-	1	(252/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and meso	USPAT; US-PGPUB	2002/04/24 07:54
-	3	(429/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and meso	USPAT; US-PGPUB	2002/04/24 07:54
-	7	((361/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and meso ) or ((204/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and meso ) or ((252/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and meso ) or ((429/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)) and meso )	USPAT; US-PGPUB	2002/04/24 07:55
-	95	429/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)	USPAT; US-PGPUB	2002/04/24 07:57
-	76	361/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)	USPAT; US-PGPUB	2002/04/24 08:13
-	60	204/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)	USPAT; US-PGPUB	2002/04/24 07:58
-	24	252/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4)	USPAT; US-PGPUB	2002/04/24 07:58
-	7	((429/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4) ) or (361/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4) ) or (204/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4) ) or (252/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4) ) ) and meso	USPAT; US-PGPUB	2002/04/24 08:00
-	212	(429/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4) ) or (361/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4) ) or (204/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4) ) or (252/\$.ccls. and (electrolyte or electrode or capacitor) and (activated adj carbon near4 fib\$4) )	USPAT; US-PGPUB	2002/04/24 08:04
-	7318	honda adj giken adj kogyo adj kabushiki adj kaisha	USPAT; US-PGPUB	2002/04/24 08:16
-	79	(honda adj giken adj kogyo adj kabushiki adj kaisha) and activated adj carbon	USPAT; US-PGPUB	2002/04/24 08:24
-	6	((honda adj giken adj kogyo adj kabushiki adj kaisha) and activated adj carbon) and cellulose	USPAT; US-PGPUB	2002/04/24 08:17
-	0	((honda adj giken adj kogyo adj kabushiki adj kaisha) and activated adj carbon) and meso	USPAT; US-PGPUB	2002/04/24 08:24
-	0	(honda adj giken adj kogyo adj kabushiki adj kaisha) and meso	USPAT; US-PGPUB	2002/04/24 08:25
-	6	(mesophase near4 (activated adj carbon adj fib\$4)) and electrode	USPAT; US-PGPUB	2002/06/26 21:11
-	3	(mesophase near4 (activated adj carbon adj fib\$4)) and electrode	EPO; JPO; DERWENT; IBM_TDB	2002/06/26 21:10

-	4	429/\$.ccls. and (mesophase near4 (activated adj carbon adj fib\$4)) and electrode and concentration	USPAT; US-PGPUB	2002/06/26 21:12
-	5	429/\$.ccls. and (mesophase near4 (activated adj carbon adj fib\$4)) and electro	USPAT; US-PGPUB	2002/06/26 20:56
-	5	429/\$.ccls. and (mesophase near4 (activated adj carbon adj fib\$4))	USPAT; US-PGPUB	2002/06/26 21:04
-	0	(mesophase near4 (activated adj carbon adj fib\$4)) and electrode	USOCR	2002/06/26 21:12
-	6	(429/\$.ccls. and (mesophase near4 (activated adj carbon adj fib\$4))) or (429/\$.ccls. and (mesophase near4 (activated adj carbon adj fib\$4)) and electrode) or (429/\$.ccls. and (mesophase near4 (activated adj carbon adj fib\$4)) and electrode and concentration) or ((mesophase near4 (activated adj carbon adj fib\$4)) and electrode)	USPAT; US-PGPUB	2002/06/26 21:13

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-135555

(43)Date of publication of application : 18.05.2001

(51)Int.Cl.

H01G 9/058

(21)Application number : 11-311540

(71)Applicant : HONDA MOTOR CO LTD

(22)Date of filing : 01.11.1999

(72)Inventor : IWAIDA MANABU  
KOMAZAWA EISUKE

## (54) ELECTRODE IN ELECTRIC DOUBLE LAYER CAPACITOR

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an electrode in an electric double layer capacitor for reducing contact resistance with a collector.

SOLUTION: An electrode(e) of an electric double layer capacitor includes an active substance 15 and a conductive material 16 and at the same time, joined to collectors 10 and 13. In this case, an electrode surface 18 of the electrode(e) joined with the collectors 10 and 13 has conductive-material density higher than that of an electrode inside 19.



## LEGAL STATUS

[Date of request for examination]

22.12.2000

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[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

\*NOTICES \*

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

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CLAIMS

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[Claim]

[Claim 1] The electrode for electric double layer capacitors characterized by the electric conduction material concentration of the electrode surface section (18) joined to the aforementioned collection \*\*\*\* (10, 13) being higher than the electric conduction material concentration inside an electrode (19) in the electrode for electric double layer capacitors joined to \*\*\*\*\* (10, 13), including an active material (15) and electric conduction material (16).

[Claim 2] The aforementioned active material (15) is the electrode for electric double layer capacitors of the claim 1 publication which is fibrous mesophase active carbon.

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[Translation done.]

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-052971

(43)Date of publication of application : 23.02.2001

(51)Int.Cl.

H01G 9/058

C01B 31/12

H01G 9/038

(21)Application number : 11-226717

(71)Applicant : HONDA MOTOR CO LTD

(22)Date of filing : 10.08.1999

(72)Inventor : NOGUCHI MINORU  
IWAIDA MANABU

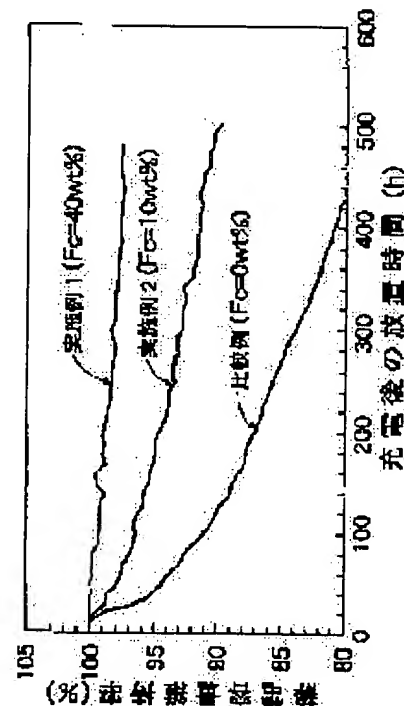
## (54) ELECTRIC DOUBLE-LAYERED CAPACITOR

## (57)Abstract:

PROBLEM TO BE SOLVED: To provide an electric double-layered capacitor of a large electrostatic capacity with superior durability.

SOLUTION: As an electrolyte, a propylene carbonate solution of borofluoride quaternary ammonium compound is used. Its electrode comprises an alkali active carbon whose material is mesophase pitch, and a conductive filler, having a rest potential smaller than that of the alkali active carbon in the electrolyte.

The amount of a conductive filler Fc of the electrode is set to 10 wt. % $\leq$ Fc $\leq$ 40 wt. %.



## LEGAL STATUS

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26.05.2000

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3. In the drawings, any words are not translated.

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CLAIMS

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[Claim]

[Claim 1] It is the electric double layer capacitor which has an electric conduction filler with rest potential smaller than the rest potential of the alkali activation charcoal with which the electrode uses a mesophase pitch as a raw material in the electric double layer capacitor using the propylene carbonate solution of the hexafluoride 4th ammonium compound as electrolytic solution, and the aforementioned alkali activation charcoal in the aforementioned electrolytic solution, and is characterized by the loadings  $F_c$  of the aforementioned electric conduction filler in the aforementioned electrode being  $10\text{wt}\% \leq F_c \leq 40\text{wt}\%$ .

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[Translation done.]



## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-126966

(43)Date of publication of application : 11.05.2001

(51)Int.Cl.

H01G 9/058

(21)Application number : 11-305814

(71)Applicant : HONDA MOTOR CO LTD

(22)Date of filing : 27.10.1999

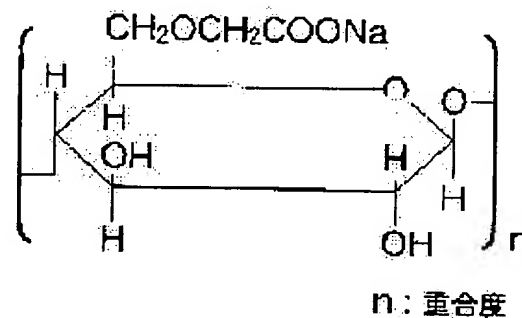
(72)Inventor : MURAKAMI KENICHI  
TAKESHITA YUKIHIRO  
OKI NAOHIKO

(54) ELECTRODE-FORMING SLURRY IN ELECTRIC DOUBLE-LAYER CAPACITOR

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an electrode-forming slurry and an electrode in an electric double-layer capacitor for uniformly distributing meso-phase activated carbon and obtaining an electrode of high strength.

SOLUTION: An electrode-forming slurry is for use in doctor blade method and contains mesophase activated carbon and carboxymethylcellulose(CMC), and the degree of etherification of CMC is set in the range of  $0.6 \leq De \leq 0.9$ .



## LEGAL STATUS

[Date of request for examination]

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[Date of final disposal for application]

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2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

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**CLAIMS**

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[Claim]

[Claim 1] The slurry for electrode formation of the electric double layer capacitor characterized by the degree De of etherification of CMC being  $0.6 \leq De \leq 0.9$  including mesophase active carbon and CMC.

[Claim 2] The electrode of the electric double layer capacitor characterized by the degree De of etherification of CMC being  $0.6 \leq De \leq 0.9$  including mesophase active carbon and CMC.

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[Translation done.]